

PHOSPHATE AND PHOSPHATIC FERTILIZERS MANUFACTURING PROCESS

BACKGROUND:

Phosphoric acid is the backbone of all phosphate fertilizers and the production of phosphoric acid is the first step.

Phosphoric acid is produced by what is known as the wet process, in which sulfuric acid is added to the rock. This process is called the wet process(es). The wet processes include the dehydrate and the hemihydrate processes (hydrates of gypsum). All the wet processes are energy intensive and polluting to the environment. Typically, the wet process phosphoric chemical complex requires from one hundred to three hundred acres of acid ponds.

The new process overcomes this problem.

SUMMARY/DESCRIPTION:

1/1/02
cs ^{*this*} In ~~the new~~ invention, the P205 (phosphorus pentoxide) is produced from the phosphate rocks
cs through a gas solid reaction ^{*i.e.*} (no water, no acid solution(s) is required). This is accomplished by
cs treating the rocks with acid gases. (Example: SO₃ - sulfur trioxide) in any gas phase reactor.
(Example: tranflow reactor). The reaction products will include P205 in the gas phase and
calcium sulphate in the solid phase. P205 can be recovered by absorption by acid/chemical
solutions, or any other recovery means, depending on the final product desired.

00705967-110300

[illegible]

- Page 3